

No. 255

HOW TO USE

K-D

Valve Service Tools

IN ALL FORD-BUILT MOTORS

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including Lincoln Zephyr . . . 6-13

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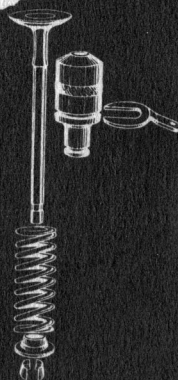
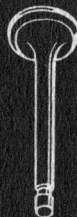
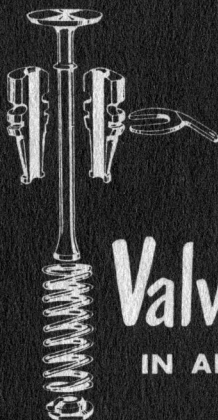
OPERATION OF BASIC

K-D TOOLS 15-20

See back cover for condensed list
required tools to service all engines.

Published by the makers of K-D TOOLS--

K-D Mfg. Co., Lancaster, Pa., U.S.A.



FOUR CYLINDER ENGINES

VALVE GUIDE ASSEMBLIES REMOVED AS A UNIT (Pages 1, 2)

- (A)** 1928-32 Models A, AA, B, BB (Passenger & Truck).
- (B)** 1939-48 Tractors to 1948 (to Serial No. 42162) and Truck Models 1NC, 2NC, 1/2 Ton; 1ND, 2ND, 3/4 Ton; 1NY, 2NY, 1 Ton. (Page 2)

VALVE GUIDE ASSEMBLIES & SPLIT KEEPERS (Page 3)

- (C)** 1948-52 Tractors (after Serial No. 42162).

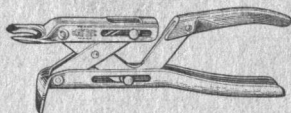
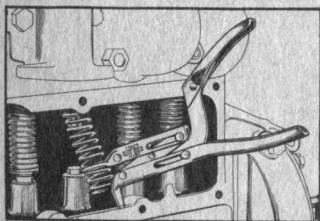
OVERHEAD VALVES

- (D)** Tractors since 1953. (Page 3)

(A) 1928-1932 Models

1. **K-D No. 502 Valve Guide Driver** to remove frozen guides. **K-D No. 307 Valve Spring Lifter** to remove springs.

Procedure: K-D No. 307 Lifter. Upper jaw is inserted between the spring coils. Lower jaw rests against the bot-



No. 307 VALVE SPRING LIFTER

tom of the valve chamber. Compressing handles raises spring, allowing horseshoe retainer to be removed. Retainer removed, the spring is allowed to expand, and is "walked out" as shown above.

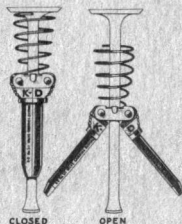
K-D No. 502 Driver for removing "frozen" valve guides. Driver is inserted in valve port with the bottom of the driver resting against the top of the guide. Striking top of driver forces guide out.



No. 502 DRIVER

2. **K-D No. 511 Valve Grinding Bushings** for grinding valves and establishing stem to tappet clearance. Body diam. .591".

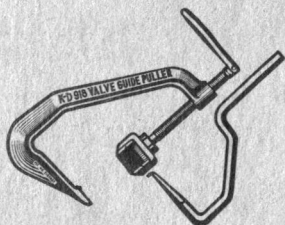
K-D 511
VALVE
GRINDING
BUSHING



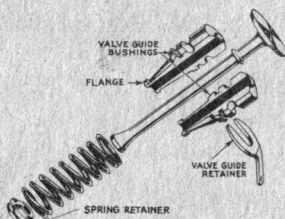
3. **K-D Vacuum Cup Valve Grinders.** See Page 18.

B

1939-48 Tractors and Trucks



K-D No. 920
VALVE GUIDE PULLER SET



THE VALVE ASSEMBLY

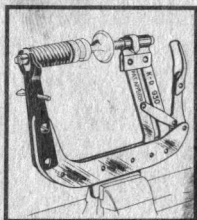
1. **K-D No. 920 Valve Guide Puller Set** to remove valve guide assemblies. Follow procedure outlined on page 16.

2. **K-D No. 930 Valve Spring Compressor** to dismantle valve assemblies. See page 17.

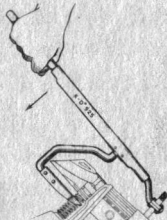
3. **K-D No. 925 Replacing Tool** to replace valve guide assemblies. Follow procedure outlined on page 18.

4. **K-D No. 1118 Valve Grinding Bushing** for grinding valves and establishing stem-to-tappet clearances. Body diam. 1.029".

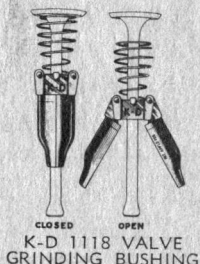
5. **K-D Vacuum Cup Valve Grinders.** See page 18.



K-D 930
COMPRESSOR



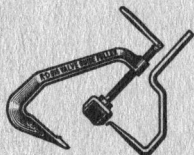
K-D 925
REPLACING TOOL



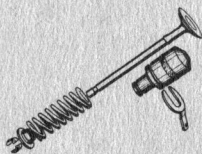
K-D 1118 VALVE
GRINDING BUSHING

(C)

1948-1952 Tractors



K-D No. 920
VALVE GUIDE PULLER SET

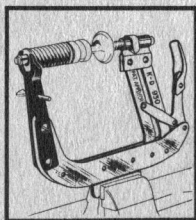


THE VALVE ASSEMBLY

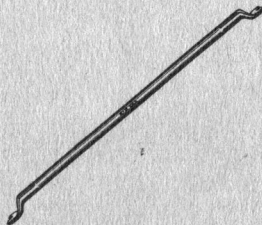
1. **K-D No. 920 Valve Guide Puller Set** to remove assemblies. See page 16.

2. **K-D No. 930 Compressor** to dismantle Valve Assemblies. See page 17.

3. **K-D No. 245 Bar Type Lifter** to replace assemblies. See page 17.



K-D 930 COMPRESSOR



K-D 245 LIFTER



K-D 1120 BUSHING

NOTE: a. No. 925 Replacing Tool can also be used to replace assemblies. See page 18.

b. For optional service of individual valves without removing entire valve guide assembly use 930 Compressor, 608 Insertor, page 11.

c. Late models equipped with rotating free type exhaust valves, see page 13.

4. **K-D No. 1120 Valve Grinding Bushings** for grinding valves and establishing stem-to-tappet clearance. Solid, one piece bushing. Body dia. 1.030".

5. **K-D Vacuum Cup Valve Grinders.** See page 18.

(D)

Tractors since 1953

1. **K-D 380 Valve Spring Compressor** to remove and replace valves. Procedure same as 6 cylinder and V-8 cylinder overhead valve engines. See page 19.

SIX CYLINDER ENGINES

VALVE GUIDE ASSEMBLIES REMOVED AS A UNIT (Page 4)

- A** 1941-47 incl. 90 h.p. Models 1GA, 2GA, 5GA, 7HA.
Truck Models GA, GC, GD, GY, GT, G8T, GU, G4T.

CONVENTIONAL "L-HEADS" (Page 5)

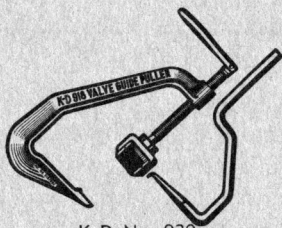
- B** 1948-51 Passenger Models 8HA, 0HA, 1HA.
1948-50 Trucks F1 to F6, "H" Series Engines (also C.O.E.).
1949-53 incl., 112 h.p. "M" Series Engines, 254 cu. inches.

OVERHEAD VALVES (Page 6)

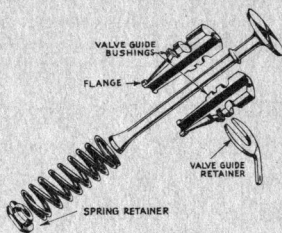
- C** 1952-53 Passenger and Truck. Series EAA and EAG engines, 215 cu. inches.
1954-55 Passenger and Truck. Series EBP, EBR, EBS, EBT engines, 223 cu. inches.

A

1941-47 Passenger & Truck



K-D No. 920
VALVE GUIDE PULLER SET



THE VALVE ASSEMBLY

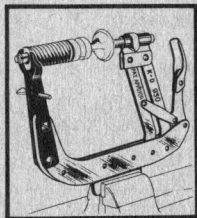
1. **K-D No. 920 Valve Guide Puller Set** (consisting of No. 917 Valve Guide Retainer Driver and No. 918 Valve Guide Puller) to remove entire valve guide assemblies. **ALSO No. 923 Adaptor Cup.** Follow procedure for No. 920 Set on page 16.



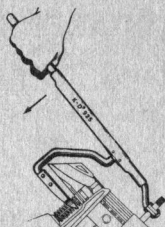
K-D 923
ADAPTOR

NOTE: In these 6 cylinder motors the intake valves are larger than exhaust, and will not rise inside the regular pressure cup on the 918 Puller. The No. 923 Adaptor Cup is not a part of the 920 Set, but must be ordered separately. See page 17.

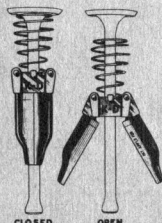
2. **K-D No. 930 Valve Spring Compressor** to dismantle the Valve Assembly. Follow procedure on page 17.



K-D 930
COMPRESSOR



K-D 925
REPLACING TOOL



K-D 1118 VALVE
GRINDING BUSHING

3. **K-D No. 1118 Valve Grinding Bushing** for grinding valves and establishing valve-to-tappet clearances. Body diam. 1.029".

4. **K-D Vacuum Cup Valve Grinders.** See page 18.

5. **K-D 925 Valve Guide Replacing Tool.**

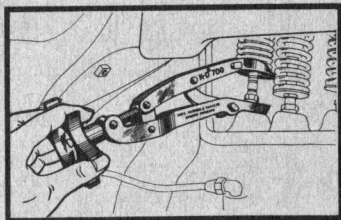
NOTE: A bar lifter cannot be used on these motors because there is no "heel" on the engine block to rest the bar for leverage to pull guide assemblies down. ONLY K-D 925 will install them. Follow procedure on page 18.

B

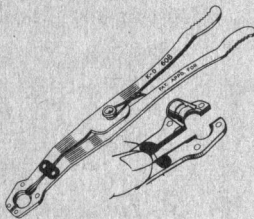
1948-53 "L-Heads"

1. **K-D No. 700 Valve Spring Lifter.**

PROCEDURE: Adjust jaws of the Lifter with thumbscrew to fit spring and tappet. Turn handwheel to bring jaws together so lifter may be positioned. Place cup-shaped upper jaws under spring, lower jaws on tappet block. Turn handwheel clockwise, raising spring to desired height. Tool locks automatically. Remove keepers. Turn handwheel back, allowing spring to descend.



K-D 700 VALVE SPRING LIFTER



K-D 608 VALVE KEEPER
INSERTER

2. **K-D 608 Valve Keeper Inserter** to replace keepers. Self supporting on stem. See full description of tool, page 20.

NOTE: If rotating free type exhaust valves are to be installed, see section "Free Type Valves, Service and Installation," page 13. Free type valves require K-D 609 Magnetic Keeper Insertor for replacing the thin, split collar type keepers used.

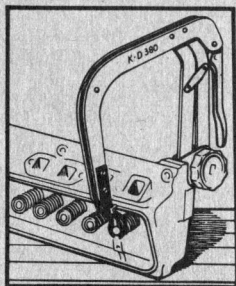
3. K-D Vacuum Cup Valve Grinders. See page 18.



VALVE-IN-HEAD ENGINES

1. K-D 380 Valve Spring Compressor for removing and replacing valves. Follow procedure given on page 19.

2. K-D Vacuum Cup Valve Grinders. See page 18.



K-D 380 COMPRESSOR

V-8 CYLINDER ENGINES

— VALVE GUIDE ASSEMBLIES REMOVED AS A UNIT (Pages 7-9)

(A) 1932-33. 85 h.p. Models 18, 40; also 1/2, 1 1/2 Ton Trucks.

(B) 1934-47 All Passenger Cars and Trucks except 60 h.p.
1939-47 All Mercury.
1933-1947 Lincoln Zephyr.

(C) 1937-40. 60 h.p. Models 74, 82A, 922A, 022A and Truck Models 73, 82C, 922C, 1/2 Ton; 92D, 3/4 Ton; 82Y, 92Y, 1 Ton; 75, 1 1/2 Ton. (Page 9)

— VALVE GUIDE ASSEMBLIES AND SPLIT KEEPERS (Page 10)

(D) 1948-53 Passenger Models 89A, 8BA, 0BA, 1BA, EBA; Truck Models F-1 to F-6, "R" Series Engines.
1948-53 Mercury.

— SPLIT KEEPERS ONLY (Valve-in-Block) (Page 12)

(E) 1948-51 Truck Models F-7, F-8, 145 h.p.
1949-51 Lincoln.

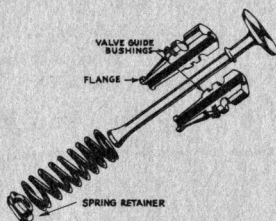
— OVERHEAD VALVES (Page 13)

(F) All V-8 Trucks since 1952; All V-8 Passenger since 1954.
Lincoln since 1952. Mercury since 1954.

A**1932-33 Passenger & Truck****1. K-D No. 818 Valve Guide**

Driver for removing guide assemblies. No. 245 Bar Type Lifter for raising springs and replacing assemblies.

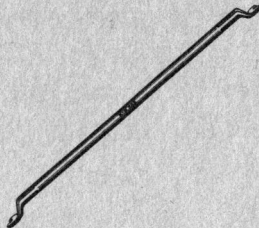
PROCEDURE: Raise spring with No. 245 Bar Lifter and remove retainer. Valve head can now be raised and 818 Driver inserted into guide bore. The stem of No. 818 is sufficiently offset to get under the valve head and deliver a square blow to the guides, and is long enough to drive the guides out of the bore. The end of the tool is large enough to bear generously on the both halves of the guide. Both guides removed, valve can be pulled up thru guide bore. To replace—drop assemblies in bore. Insert No. 245 Lifter under spring and raise far enough to insert retainer.



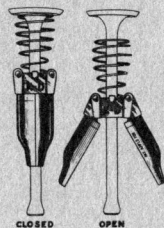
THE VALVE ASSEMBLY



K-D 818 DRIVER



K-D 245 LIFTER



K-D 1118 GRINDING BUSHING

2. K-D No. 1118 Valve Grinding Bushing for grinding valves and establishing valve-to-tappet clearances. One piece, hinged. When inserting bushing, the lug at the top must be in the valve port or the bushing will not seat properly. Body diam. 1.029".

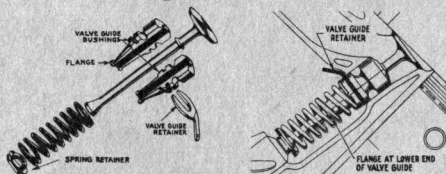
3. Vacuum Cup Valve Grinders. See page 18.

B

1934-47 Passenger & Truck (except 60 h.p.)
1939-47 Mercury **1933-47 Lincoln Zephyr**

1. K-D No. 920 Valve Guide Puller Set (consisting of No.

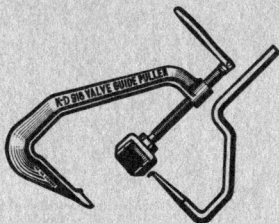
917 Valve Guide Retainer Driver and 918 Valve Guide Puller) to remove valve guide assemblies.



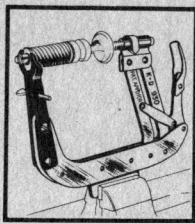
THE VALVE ASSEMBLY

PROCEDURE: Follow procedure for K-D No. 920 Set given on Page 16.

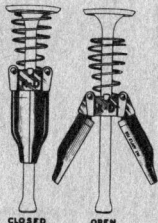
NOTE: In removing retainers, there is a vent hole thru Lincoln Zephyr retainers, and to avoid tearing, they must be handled with even more care than those in other Ford Motors. Use K-D 921 Replacement Retainers, Page 20.



K-D 920 SET



K-D 930 COMPRESSOR



K-D 1118 BUSHING

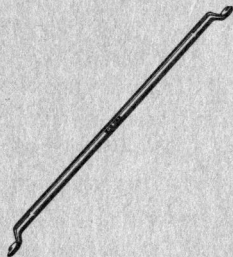
2. **K-D 930 Valve Spring Compressor** to dismantle valve guide assemblies. Use procedure given on page 17.

3. **K-D No. 1118 Valve Grinding Bushing** for grinding valves and establishing valve-to-tappet clearances. Bushing is one piece, hinged. When inserting bushing, the lug at the top must be in the valve port, or the bushing will not seat properly. Body diam. 1.029".

4. **K-D Vacuum Cup Valve Grinders.**
See page 18.*

5. **K-D No. 245 Bar Type Lifter** for replacing assemblies. See page 17.

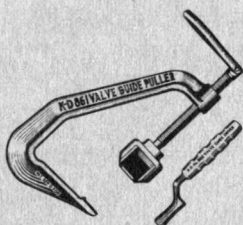
NOTE: Assemblies can also be replaced with K-D No. 925 Replacing Tool. See page 18. No. 925 **must** be used on Lincoln Zephyr since there is no "heel" on the casting to rest a bar lifter.



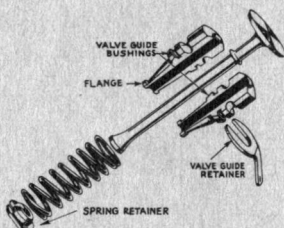
K-D 245 LIFTER



1937-40, 60 h.p. V-8 Passenger & Truck

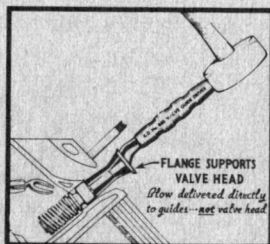


K-D 860 SET



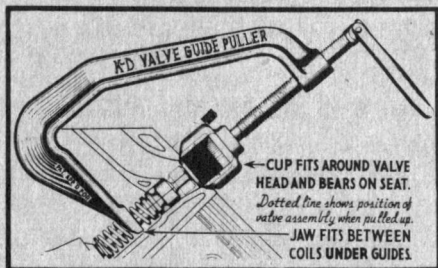
THE VALVE ASSEMBLY

1. K-D No. 260 Bar Type Valve Spring Lifter and K-D No. 860 Set (consisting of No. 862 Guide Driver and No. 861 Guide Puller) for removing valve guide assemblies.



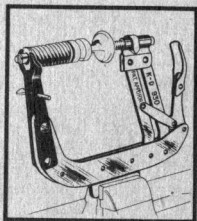
OPERATIONS 1, 2, 3 IN REMOVING VALVE GUIDE RETAINER

PROCEDURE: 1. Insert No. 260 Bar Lifter under valve stem and raise valve far enough to insert No. 862 Driver under valve head. 2. With Driver holding valve up, take a secure position with Lifter, compressing spring as much as possible. 3. This allows replacement of Driver so that guides can be driven down far enough to permit removal of valve guide retainer only. Remove Driver. 4. Place jaw of No. 861 Puller between spring coils, **under guides**, as shown, turn screw to pull entire assembly.

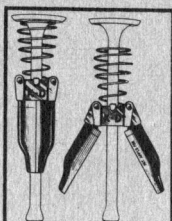


OPERATION 4. PULLING GUIDE ASSEMBLY

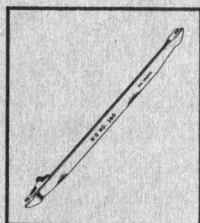
NOTE: If guides should be driven down so far when removing retainer that Driver cannot be removed, an opening has been provided in the pressure cup of the Puller to allow application of the Puller around the Driver. **In this case,** Puller jaw will have to be applied to the end of the valve stem instead of under the guides.



K-D 930 COMPRESSOR



K-D 1160 BUSHING



K-D 260 BAR LIFTER

2. **K-D No. 930 Compressor** to dismantle valve guide assemblies. See page 17.

3. **K-D No. 1160 Valve Grinding Bushing** for grinding valves and establishing stem-to-tappet clearances. Body diam. .8505".

4. **K-D Vacuum Cup Valve Grinders.** See page 18.

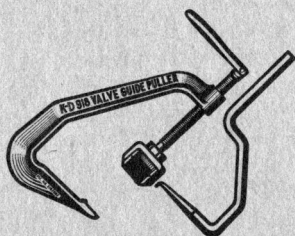
5. **K-D No. 260 Bar Type Lifter** for replacing assemblies.

PROCEDURE: Drop reassembled valve spring and guides into guide bore with split between guides running cross-wise in the motor. Engage the jaw of the Lifter on the shoulder cast on the bottom of the guides. Lifting up the handle of the Lifter will cause the fulcrum to bear on the block casting, pulling the guides down and permitting installation of the valve guide retainer.

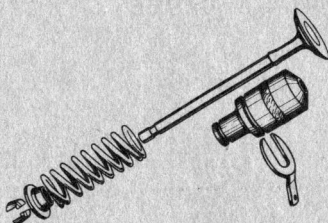


1948-53 Passenger & Truck Models F1-F6 1948-53 Mercury

1. **K-D No. 920 Valve Guide Puller Set** to remove guide assemblies page 16. (Consists of No. 917 Valve Retainer Driver and No. 918 Valve Guide Puller.) To replace assemblies use K-D No. 245 Bar Type Lifter. Procedure is given on page 17. No. 930 Valve Spring Compressor to dismantle valve guide assemblies. See page 17.



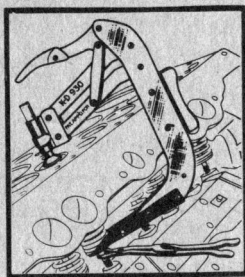
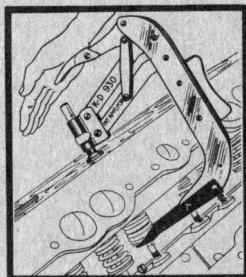
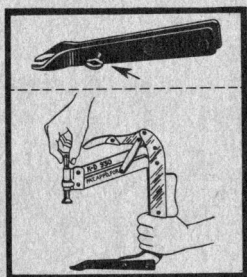
K-D 920 SET



THE VALVE ASSEMBLY

EXCEPTION: Individual valves may be removed and serviced in these motors without removing the entire valve guide assembly. Use K-D No. 930 Valve Spring Compressor to remove and replace springs, and K-D No. 608 Valve Keeper Insertor to replace keepers. Procedure follows below.

Procedure for Servicing Individual Valves: 1. Adjust jaws of No. 930 Compressor with wing screw to fit valve spring. Next adjust plunger screw to line marked 100 h.p. Compressor now ready for use. 2. Raise operating handle, place tool on motor with lower jaws under lower spring retainer. Pushing operating handle down raises spring. After keepers removed, raise operating handle to remove Compressor. Reverse operation to replace spring. 3. Use 608 Insertor to replace keepers, page 20.



OPERATIONS 1, 2, 3 IN OPTIONAL SERVICE OF INDIVIDUAL VALVES

2. **K-D No. 1120 Valve Grinding Bushing** for grinding valves and establishing stem-to-tappet clearances. Body diam. 1.030".



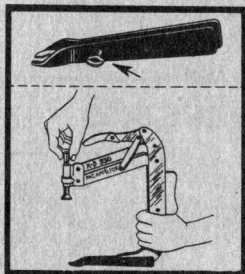
3. **K-D Vacuum Cup Valve Grinders.** See page 18. K-D 1120

(E)

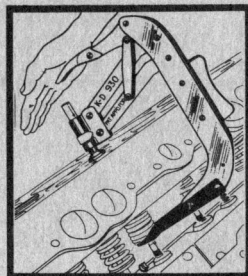
1948-51 Truck Models F-7, F-8 & Lincoln

1. **K-D No. 930 Valve Spring Compressor** to raise spring for removal of keepers. **K-D No. 935 Valve Spring Compressor** to remove springs. Both tools are necessary to do the job.

PROCEDURE: Step One: Adjust jaws of No. 930 Compressor with wing screw to fit valve spring. Next—adjust plunger screw to line marked "150 h.p.". Raise



ADJUSTING TOOL

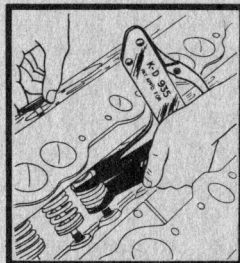


RAISING SPRING

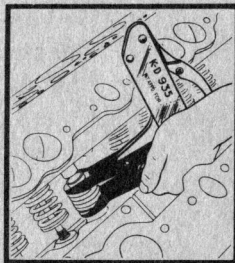
operating handle. Place tool on motor, lower jaws under lower spring retainer. Pushing handle down raises spring. Remove keepers. Proceed to remaining valves without changing plunger bar setting.

STEP TWO: Removing spring with No. 935 Compressor.

Place upper jaw in position between cylinder casting and upper valve spring retainer—lower jaws beneath lower valve spring retainer. Compress spring by moving operating handle down until it locks in position. Hold compressed spring up against cylinder casting, and be sure



COMPRESSING SPRING



REMOVING OR REPLACING
SPRING



REPLACING KEEPERS

the tappet is not stuck in the lower spring retainer before removing valve. Valve removed, slide spring down, cocking lower end toward you until the inner edge of the lower retainer rests on top of the tappet. At the same time pull up toward you gently, to slide spring out.

To replace springs, reverse operations above.

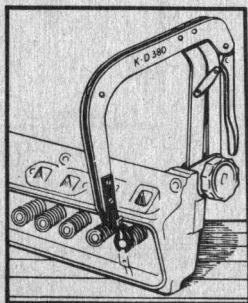
Use No. 608 Valve Keeper Insertter to replace keepers.

NOTE: On any of these engines, with free type exhaust valves using split collar type keepers, use K-D 609 Magnetic Keeper Insertter. See page 20.



VALVE-IN-HEAD ENGINES

1. **K-D 380 Compressor** for removing and replacing valves. Follow procedure on page 19.



FREE-TYPE VALVES

To increase exhaust valve life, in FORD 8EQ engines free-type valve assemblies were released for production starting February 9, 1949, with engine No. 8EQ-27993. Successful operation of the free-type valve assembly depends entirely on proper installation. Clearance required between the end of the valve stem and inside depth of the cap is very important. It is controlled two ways:

- A. By the length of the valve stem from its tip end to the face of the undercut on which keepers rest.
- B. By the inside depth of the cap. See diagram.

If the inside cap depth is too shallow, or the length between the undercut and end of valve stem is too long, the cap will

not lift the keys and spring, consequently valve will not rotate. On the other hand, if the cap depth is too deep or the length between the undercut and tip is too short, clearance will be excessive, resulting in a high wear rate between cap and keys, also possible valve breakage.

Servicing and Installing Free-Type Valves in 150 h.p. Ford Trucks

1. Remove valve springs with 930, 935 Compressors as explained on page 12. Remove valves.
2. Compress spring and lower spring retainer with No. 935 Compressor.

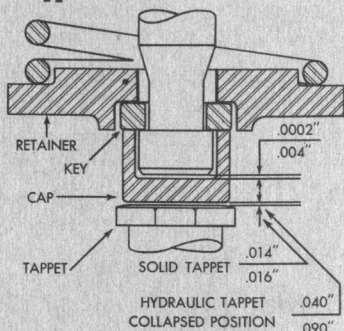
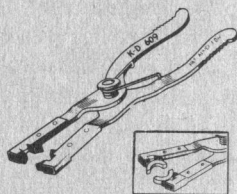
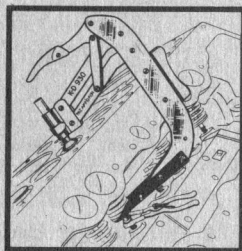


DIAGRAM OF FREE-TYPE VALVE

3. Replace spring and retainer with 935 Compressor. Install valve and place cap on end of valve stem. Let spring down by lifting handle on compressor.
4. To replace large, split collar type keepers on these free type valves lift the spring with the 930 Compressor, and install keepers with self supporting K-D 609 Magnetic Keeper Inserter. Lower spring and proceed to next valve.



K-D 609 INSERTER



K-D 930 AND 609 INSERTER

Check clearance between end of valve stem and inside of cap. The clearance between valve end and cap can be checked before installing the valve assembly with a special microm-

eter built for this purpose. If this micrometer is not available, clearance can readily be checked after parts are assembled in the engine as follows. Turn the engine over until the valve is off the seat and can be rotated freely by thumb and forefinger in the lifted position. In this free position the actual clearance can be measured by locating a dial indicator on the valve head and noting the reading when the valve is moved vertically. This clearance can be .0002" providing the valve turns freely, but not over .004" maximum vertical movement. If vertical movement exceeds .004", polish open end of cap against a piece of fine emery cloth to bring vertical movement of valve to specified clearance. If vertical movement is less than .0002", grind off end of valve stem to provide clearance.

NOTE: If free valves are used with hydraulic tappets, bleed oil out of hydraulic units by inserting brass wire through the tube to open the check valve and then press down on plunger until it bottoms. Install tappet and valve and check clearance (.040" to .090"). If free valves are used with adjustable tappets, adjust screw in tappet until there is .014" to .016" clearance between valve in closed position and tappet when on heel of cam. This applies to exhaust valves only. Intake valves are set .010" to .012".

OPERATING PROCEDURE FOR BASIC TOOLS

K-D No. 920 VALVE GUIDE PULLER SET

K-D No. 245 BAR TYPE VALVE SPRING LIFTER

K-D No. 930 COMPRESSOR TO DISMANTLE VALVE
GUIDE ASSEMBLIES

K-D No. 925 REPLACING TOOL

VACUUM CUP VALVE GRINDERS

K-D No. 380 VALVE SPRING COMPRESSOR

K-D No. 608 and 609 VALVE KEEPER INSERTERS.

K-D 920 Valve Guide Puller Set

1. The K-D 920 Set consists of No. 917 Valve Retainer Driver and No. 918 Valve Guide Puller.

2. Place No. 917 Driver in the position shown in Fig. 1, with hook end of tool engaged in the hole in guide retainer. Allow lower spring retainer to remain in place. Strike the

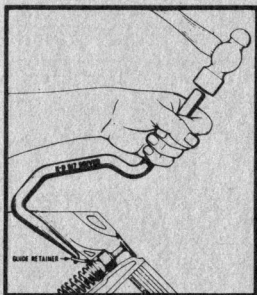


FIGURE 1

driver handle squarely and firmly, but not too hard until retainer is removed. Remember the retainer rests in a counterbore in the block and must be "forged" out slowly. If guides are tightly stuck, damage to the guides may result if the first few hammer blows are too hard. This method for removing retainers will damage the retainers, but the

time saved more than pays the small cost of new ones. See No. 922 Retainers, Page 20.

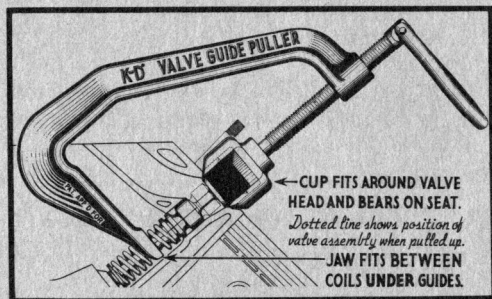


FIGURE 2

3. After retainers are removed, place No. 918 Puller in position shown. The tempered steel jaw plate is placed between the coils of the spring under the guides. It is notched to fit around the valve stem. The pressure cup rests on the block casting around the valve head. When the screw handle is turned down, the jaw plate bears on the bottom of the guides, and the assembly is pulled up and out, no matter how tightly it had been stuck. The pressure cup has sufficient internal clearance to allow the valve head to rise inside it as the assembly is pulled up.

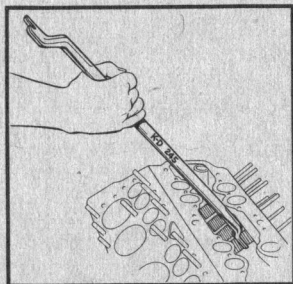


K-D 923
ADAPTOR

NOTE: In 6 cylinder motors the intake valves will not rise inside the pressure cup on the No. 918. No. 923 Adaptor must be used. No. 923 is not a part of 920 Set, but must be purchased separately.

K-D 245 Bar Type Valve Spring Lifter

1. This tool is used to replace valve guide assemblies. Drop assemblies into guide bores. On motors with split guides, be sure the split between the guides runs crosswise so that each half of the guides is gripped by the jaw of the No. 245 Bar Lifter. Insert jaw of the No. 245 Bar Lifter between the spring coils, engaging the shoulder cast on the bottom of the guide. Raising up on the handle will pull the guide down, permitting installation of the valve guide retainer.



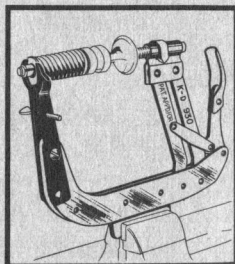
K-D 245 BAR LIFTER

NOTE: This tool is to be used only for replacing valve guide assemblies. Any attempt to remove frozen guides with No. 245 voids our guarantee.

K-D 930 Valve Spring Compressor

1. Dismantling the Valve Assembly.

Grip compressor in bench vise, adjust jaws with wing screw to fit spring. Next, turn plunger bar down as far as it will go. (Adjust plunger screw to line marked 100 h.p. for 1949 and later Ford and Mercury. On earlier models screw plunger bar down as far as it will go.) Tool now ready for use. Raise operating handle and place assembly in Compressor. Pushing operating handle down compresses spring, permitting removal of spring retainer (or split keep-

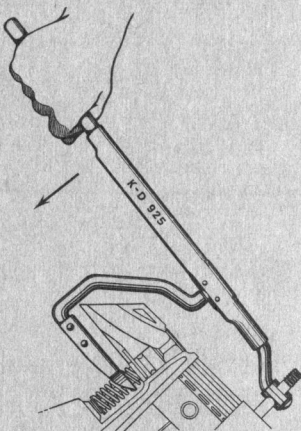


ers in later models). After valves are ground the valve assembly is put together again by reversing the procedure just described.

K-D 925 Valve Guide Replacing Tool

1. For replacing assemblies only.

Drop the reassembled valve, guide, and spring into guide bore with the split between guides running crosswise in the block. Place the link on the end of the tool on one of the head studs as shown, with the jaw between the coils of the spring engaged on the shoulder cast on the end of the guide. Downward pressure on the handle pulls guide down, permitting installation of the horseshoe retainer.



NOTE: No. 925 is built for replacing guide assemblies only. It must not be used in an attempt to remove frozen assemblies. Guarantee void if so used.

Vacuum Cup Valve Grinders



K-D 504



K-D 503, 865

1. K-D 504 Valve Grinding Attachment for all Ford Motors except V-8-60. Simplifies the job when using an oscillating type valve grinder, either manual or power driven. Since there is no slot in the Ford valve head, gripping the head is accomplished by a rubber vacuum cup. To keep the cup from slipping off the head while grinding, the 504 has a spring held metal retaining ring. No. 504, 1 $\frac{3}{8}$ " cup diameter. May also be had without the metal retaining ring in No. 507, 1 $\frac{1}{8}$ " diameter, or No. 509, 1 $\frac{3}{8}$ " diameter.

2. K-D 503 Vacuum Valve Grinder is for hand operation on all Ford Motors except V-8-60. In addition to the features of the No. 504, it incorporates a handle flange which keeps the hands from working down the handle while grinding. Cup diameter $1\frac{3}{8}$ ".

3. The K-D No. 865 Vacuum Valve Grinder is for hand operation on Ford V-8-60 only and is like the No. 503 except in cup diameter which is $1\frac{1}{16}$ ".



K-D 380 Valve Spring Compressor

FIGURE 1

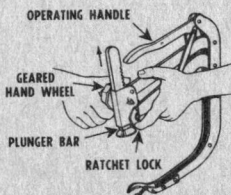
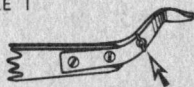


FIGURE 2

FIGURE 1. First adjust compressor jaws to fit valve spring.

FIGURE 2. Releases ratchet lock and turn Handwheel until Plunger Bar is raised as high as it will go.

FIGURE 3. Place compressor on valve with operating handle DOWN and raise first spring by turning hand wheel. When this spring is raised, the ratchet lock will be engaged and the depth adjustment will be set automatically for all the remaining springs. Raise operating handle to remove compressor. After the first spring, place compressor on valve with operating handle UP. Push down to raise spring. Repeat the operation when replacing keepers, using the operating handle only.

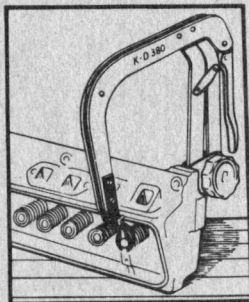
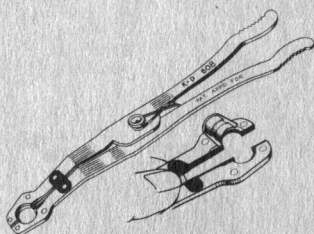


FIGURE 3

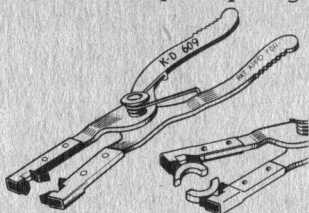
Valve Keeper Inserters

1. **K-D No. 608 Valve Keeper Inserter** is built to handle the small size split keepers used in later Ford-built motors.

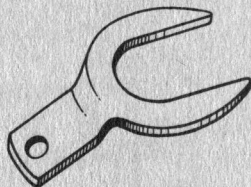


Special spring steel fingers on the jaws hold keepers securely. Self supporting on valve stem, both hands are free to work the compressor. When spring is lowered keepers are caught in correct alignment on valve stem; inserter is pushed off. Tool $8\frac{3}{16}$ " long.

2. **K-D No. 609 Magnetic Valve Keeper Inserter** was especially designed to handle the large diameter split collar type keepers used in free type exhaust valves on Ford V-8 (L-head), 6 cyl. L-head and Tractor engines after 1948. Only $4\frac{1}{2}$ " long, keepers are quickly aligned on the small jaw magnets. Self supporting on the valve stem. This tool is also very handy for picking out keepers that drop into the valley when lifting springs.



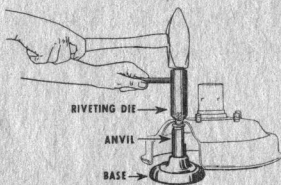
K-D Replacement Retainers: In removing retainers with the K-D 917 Valve Guide Driver, they are "forged" out and bent beyond salvaging. Time saved in this operation more than pays the small cost of new retainers. K-D No. 922 Replacement Valve Guide Retainers fit Ford V-8, Mercury, Ford 6 cyl., Ford 4 cyl. and Tractor. No. 921 fits Lincoln-Zephyr only.



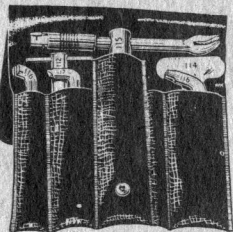
K-D 922 RETAINER

TIME-SAVING K-D TOOLS

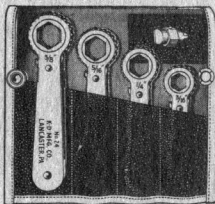
Wheel Stud Riveting Die Sets. Riveting Die, Anvil and Base for removing and installing wheel studs on brake drums. Dies and Anvil tempered and Rockwell tested. No. S565 Set—7/16" stud. No. S567 Set—9/16" stud. No. S570 Set—1/2" stud (Ford). No. S575 Set—3/4" stud.



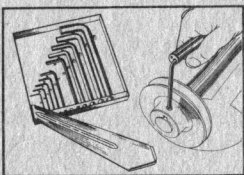
K-D 122 Ignition Kit. This kit is complete enough to make almost any type ignition adjustment. Pocket size button flap plastic case 4 15/16" x 4 5/8". Contains No. 112 Ignition Wrench; No. 114 Ford Governor Spring Adjusting Wrench; No. 115 Ignition Point Aligning Tool; No. 116 Autolite & Delco Voltage Regulator Tool; No. 117 Offset Screwdriver for Ford V-8 Ignition Point Clamping Screws; No. 118 Ford Voltage Regulator Tool.



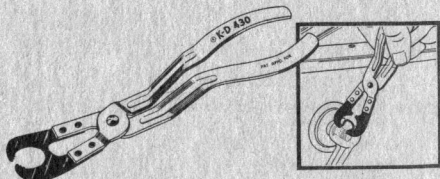
K-D 20 Ratchet Wrench Set. Four popular hex sizes, 3/8", 7/16", 1/2" and 9/16" openings put up in a pocket size plastic roll. Includes double end screwdriver bit to fit the 3/8" wrench. Each wrench is a complete unit, with no heads to change. Ratchet teeth are close to permit short stroke. Reversible ratchet, boxsocket construction. Sizes 3" to 4 1/2" long. Correctly tempered.



K-D 30 Socket Screw Key Set. 11 hex keys, sizes .050" to 3/8", packed in a handy rust-proof metal kit with hinged retaining clamp—plus—extension handle to use on short end of key when long end is used to turn screw as shown. Keys are accurately forged and correctly tempered. A quick reading chart, showing screw, cap and wrench sizes stamped into the container.



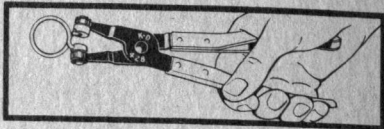
K-D 430 Door Handle Spring Remover. Removes horseshoe retaining spring used on interior door handles of all Ford-built cars since 1951 (and all GM cars since 1933). Tool



"fishes" for spring; one jaw engages spring in its bend; the other on its end and "rolls" spring out. Tough spring steel jaws.

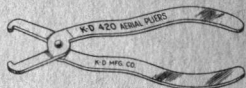
K-D 428 Hose Clamp Pliers.

Overcomes the difficulty of removing and installing self tightening, spring wire hose clamps. Slim all steel construction with tempered jaws. Jaws swivel thru 180° permitting removal or installation of clamps in any position, even deep in the motor. Deep slots in jaws hold clamps securely. Services all sizes, large or small, automotive and industrial.



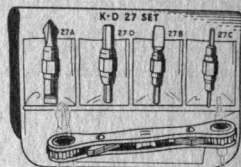
K-D 420 Radio Aerial Pliers.

For Ford, Mercury, Lincoln, Cadillac, Nash and Packard. A spanner type pliers for removing and installing the cone shaped nut now being used on fender aerials of the above cars. Also for many other light spanner wrench jobs. Tempered. Rustproof finish. 7 $\frac{3}{4}$ " long.



K-D 27 Offset Ratchet Bit Set.

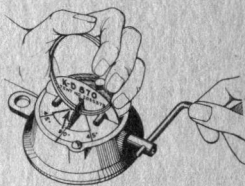
A pocket-size plastic kit containing a double end ratchet wrench, and four double end bits for use on four types of screw heads. One bit for Phillips, Reed and Prince Screws, No. 0 to 12; five bits for hex keys, sizes: 5/64", 3/32", 1/8", 5/32", 3/16"; two bits for standard screw slots 3/16", 5/16" wide. For all types of close, tight work—also for right angle applications where screwdrivers can't reach. 1/4" hex opening on one end of wrench, 5/16" on other. Reversible ratchet. Bits held in place for "upside down" work as in box-socket. Bits accurately forged, correctly tempered. Rustproof finish.



Fits all 4 types + + - ●

K-D 870 Piston Ring Filer.

A rotary filer for sizing any make, type or size of Piston Ring with machine shop accuracy. Ring held against adjustable gage plate and when crank is turned, both ends are filed square and parallel at the same time. Natural "drag" of cutting holds ring square against gage. 6" continuous cutting stroke. Saw teeth on edge useful in slotting pistons and for many other rotary hacksaw operations.



K-D 872 Cutter-Files for replacement in 870 are milled to maximum sharpness and correctly tempered for satisfactory service.

GET K-D TOOLS AT YOUR JOBBER'S

THE CORRECT K-D TOOL COMBINATIONS

For removing and replacing valves in all Ford-built motors

MODELS	TO REMOVE	TO REPLACE	MISCELLANEOUS
4 CYLINDER (Pages 1 to 3)			
1928-32	307 Lifter (1) 502 Driver (1)	307 Lifter (1)	511 Bushing (2)
1939-48 Tractor & Truck	920 Set (2, 16)	925 Replacer (2, 18)	930 Compressor (2, 17) 1118 Bushing (2)
1948-52* Tractor	920 Set (3, 16)	245 Lifter (3, 17) or 925 Replacer (3, 18)	930 Compressor (3, 17) 1120 Bushing (3)
OHV Tractor	380 Compressor (3, 19)	380 Compressor (3, 19)	— — —
6 CYLINDER (Pages 4 to 6)			
1941-47	920 Set (4, 16) with 923 Adaptor (4, 17)	925 Replacer (5, 18)	930 Compressor (4, 17) 1118 Bushing (5)
1948-52 L-Head	700 Lifter (5)	700 Lifter (5) 608 Insertor (5, 20)	609 Insertor for free type valves (6, 13)
OHV since 1953	380 Compressor (6, 19)	380 Compressor (6, 19)	— — —
V-8 CYLINDER (Pages 6 to 13)			
1932-33	245 Lifter (7) 818 Driver (7)	245 Lifter (7)	1118 Bushing (7)
Lincoln Zephyr	920 Set (7, 16)	925 Replacer (8, 18)	930 Compressor (8, 17) 1118 Bushing (8)
1934-47 (incl. Mercury) except 60 h.p.	920 Set (7, 16)	245 Lifter (8, 17) or 925 Replacer (18)	930 Compressor (8, 17) 1118 Bushing (8)
1937-40 60 h.p.	260 Lifter (9) 860 Set (9)	260 Lifter (10)	930 Compressor (10, 17) 1160 Bushing (10)
1948-53 Ford & Mercury*	920 Set (10, 16)	245 Lifter (10, 17) or 925 Replacer (18)	930 Compressor (10, 17) 1120 Bushing (11)
1948-51—145 h.p. Truck & Lincoln*	930 Compressor (12) 935 Compressor (12)	935 Compressor (12, 13) 930 Compressor (12, 13) 608 Insertor (13, 20)	609 Insertor for freetype valves (13, 20)
OHV—All	380 Compressor (13, 19)	380 Compressor (13, 19)	— — —
* 1948 & LATER Optional service individual valves without removing guides	930 Compressor (11)	930 Compressor (11) 608 Insertor (11, 20)	609 Insertor for free type valves (20)